

### **ABSTRACT OF THE DISCLOSURE**

[00118] The invention provides a highly sensitive measurement of retardance and slow axis orientation, accurately and instantaneously, across a full two-dimensional image. There are no moving parts and there need not be any electro-optic tuning as part of the measurement. It is ideally adapted to real-time imaging and is well-suited to use with biological and medical samples, including visualizing structures in oocytes. The invention splits a light beam into several beams, which are analyzed using elliptical polarizers and the resultant intensity is measured. It can be constructed using a single pixilated detector, or several detectors, to achieve high spatial resolution when this is desired.